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EXAMINER	
MANDEVILLE, JASON M	

  

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2629	

  

NOTIFICATION DATE	DELIVERY MODE
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

**Application No.**

10/586,263

**Applicant(s)**

NAKADAIRA ET AL.

**Examiner**

Jason M. Mandeville

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37-40 is/are allowed.
- 6) ☒ Claim(s) 1-36 and 41-48 is/are rejected.
- 7) ☒ Claim(s) 9, 16, 21 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 18 July 2006, 15 November 2006.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. **Figures 1-6** should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

2. **Claims 9, 21, and 33** objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Art Unit: 2629

3. **Claim 16** is objected to because of the following informalities: the claim contains a typo in the paragraph beginning with "third means." The claim recites "the plurality of display planes if transmissive display apparatuses." The examiner believes that the claim should recite "the plurality of display planes of the transmissive display apparatuses." Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1-24** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **Claims 1, 4, 13 and 16** all recite the limitation "the two-dimensional images" in the last line of the claims. It is unclear whether this limitation relates to the "first" or the "second" two-dimensional images. For the purposes of examination, the examiner assumed that the "two-dimensional images" refer to the "second two-dimensional images" as recited in the claims. **Claims 2-3, 5-12, 14-15, and 17-24** are rejected as being dependent on **Claims 1, 4, 13, and 16**, respectively.

6. **Claims 41-44** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

Art Unit: 2629

applicant regards as the invention. **Claims 41-44** recites the limitation "the predetermined threshold" in the last paragraph of the claims. There is insufficient antecedent basis for this limitation in the claims.

### ***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. **Claims 25-36 and 45-48** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. All of the referenced **Claims 25-36 and 45-48** recite computer-related nonstatutory subject matter (i.e., "a program"; see MPEP 2106.01).

The following is a quotation from the above referenced section of the MPEP:

"Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer

element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions.

Computer programs are often recited as part of a claim. USPTO personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim. The same result occurs when a computer program is used in a computerized process where the computer executes the instructions set forth in the computer program. Only when the claimed invention taken as a whole is directed to a mere program listing, i.e., to only its description or expression, is it descriptive material per se and hence nonstatutory.

Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and USPTO personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material. When a computer program is claimed in a process where the computer is executing the computer program's instructions, USPTO personnel should treat the claim as a process claim. When a computer program is recited in conjunction with a physical structure, such as a computer memory, USPTO personnel should treat the claim as a product claim."

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. **Claims 1-3 and 13-15** are rejected under 35 U.S.C. 102(e) as being anticipated by Bell et al. (hereinafter "Bell" US 2005 / 0206582).

11. As pertaining to **Claim 1**, Bell discloses (see Fig. 1, Fig. 2, and Fig. 4) a three-dimensional display method for displaying two-dimensional images, by changing brightness, on a plurality of display planes (i.e., 3, 4) placed at different depth positions as seen from an observer (8) to display a three-dimensional stereoscopic image (see Page 1, Para. [0002]-[0006] and Para. [0010]-[0011]; Page 2, Para. [0016] and Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]), wherein, on a background plane (i.e., 11, 12) displayed at an arbitrary position in a three-dimensional space (see Fig. 2), a display object (i.e., 6, 7) having brightness

Art Unit: 2629

darker than that of the background plane (11, 12) is displayed (see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]), the method comprising:

generating first two-dimensional images (i.e., 11, 12) that are obtained by projecting the background plane (11, 12) onto the plurality of display planes (3, 4) along a line of sight of the observer (8), and displaying the first two-dimensional images (11, 12) on the display planes (3, 4) respectively wherein brightness of each of the first two-dimensional images (11, 12) is changed independently for each display plane (3, 4; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]); and

generating second two-dimensional images (i.e., 6, 7) that are obtained by projecting the display object (6, 7) onto the plurality of display planes (3, 4) along the line of sight of the observer (8), and displaying the second two-dimensional images (6, 7) on the display planes (3, 4) respectively in which brightness of each of the two-dimensional images (6, 7) is set to be the same among the display planes (3, 4; again see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]; it is implicit in the disclosure of Bell that the brightness of each of the two-dimensional images (6, 7) can be set to be the same among the display planes (3, 4)).



12. As pertaining to **Claim 2**, Bell discloses (see Fig. 2 and Fig. 4) that the brightness of each of the second two-dimensional images (6, 7) displayed on each display plane (3, 4) is 0 (see Page 5, Para. [0092]-[0095]; it is implicit in the disclosure of Bell that the second two-dimensional images can have a brightness of 0).

13. As pertaining to **Claim 3**, Bell discloses (see Fig. 2 and Fig. 4) that each of the second two-dimensional images (6, 7) is a two-dimensional image in which the displayed brightness is controlled by pixel values having predetermined levels of gray, and each pixel value of each of the second two-dimensional images (6, 7) displayed on each display plane (3, 4) is 0 (again, see Page 5, Para. [0092]-[0095]; it is implicit in the disclosure of Bell that the second two-dimensional images can have a brightness of 0).

14. As pertaining to **Claim 13**, Bell discloses (see Fig. 1, Fig. 2, and Fig. 4) a three-dimensional display apparatus for displaying two-dimensional images, by changing brightness, on a plurality of display planes (i.e., 3, 4) placed at different depth positions as seen from an observer (8) to display a three-dimensional stereoscopic image (see Page 1, Para. [0002]-[0006] and Para. [0010]-[0011]; Page 2, Para. [0016] and Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]), wherein, a display object (6, 7) is an object displayed on a background plane (i.e., 11, 12) displayed at an arbitrary position in a three-dimensional space (see

Fig. 2), and has brightness darker than that of the background plane (11, 12; see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]), the apparatus comprising:

first means for generating first two-dimensional images (i.e., 11, 12; the first means for generating the first two-dimensional images is inherent in the existence of the first two-dimensional images (11, 12)) that are obtained by projecting the background plane (11, 12) onto the plurality of display planes (3, 4) along a line of sight of the observer (8; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

second means for displaying the first two-dimensional images (i.e., 11, 12) generated by the first means on the display planes (3, 4) respectively wherein brightness of each of the first two-dimensional images (11, 12) is changed independently for each display plane (3, 4) so as to display the background plane at an arbitrary position in the three dimensional space (again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

third means for generating second two-dimensional images (i.e., 6, 7; the third means for generating the second two-dimensional images is inherent in the existence of the second two-dimensional images (6, 7)) that are obtained by projecting the display object (6, 7) onto the plurality of display planes (3, 4) along a line of sight of the

Art Unit: 2629

observer (8; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

fourth means for displaying the second two-dimensional images (i.e., 6, 7) generated by the third means on the display planes (3, 4) respectively in which brightness of each of the two-dimensional images (6, 7) is set to be the same among the display planes (3, 4; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]; it is implicit in the disclosure of Bell that the brightness of each of the two-dimensional images (6, 7) can be set to be the same among the display planes (3, 4)).

15. As pertaining to **Claim 14**, Bell discloses (see Fig. 2 and Fig. 4) that the brightness of each of the second two-dimensional images (6, 7) displayed on each display plane (3, 4) is 0 (see Page 5, Para. [0092]-[0095]; it is implicit in the disclosure of Bell that the second two-dimensional images can have a brightness of 0).

16. As pertaining to **Claim 15**, Bell discloses (see Fig. 2 and Fig. 4) that each of the second two-dimensional images (6, 7) is a two-dimensional image in which the displayed brightness is controlled by pixel values having predetermined levels of gray,

Art Unit: 2629

and each pixel value of each of the second two-dimensional images (6, 7) displayed on each display plane (3, 4) is 0 (again, see Page 5, Para. [0092]-[0095]; it is implicit in the disclosure of Bell that the second two-dimensional images can have a brightness of 0).

### ***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. **Claims 25-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bell.

19. As pertaining to **Claim 25**, Bell discloses (see Fig. 1, Fig. 2, and Fig. 4) a three-dimensional display apparatus for displaying two-dimensional images, by changing brightness, on a plurality of display planes (i.e., 3, 4) placed at different depth positions as seen from an observer (8) to display a three-dimensional stereoscopic image (see Page 1, Para. [0002]-[0006] and Para. [0010]-[0011]; Page 2, Para. [0016] and Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]), wherein, a display object (6, 7) is an object displayed on a background

Art Unit: 2629

plane (i.e., 11, 12) displayed at an arbitrary position in a three-dimensional space (see Fig. 2), and has brightness darker than that of the background plane (11, 12; see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]), the apparatus comprising:

first means for generating first two-dimensional images (i.e., 11, 12; the first means for generating the first two-dimensional images is inherent in the existence of the first two-dimensional images (11, 12)) that are obtained by projecting the background plane (11, 12) onto the plurality of display planes (3, 4) along a line of sight of the observer (8; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

second means for displaying the first two-dimensional images (i.e., 11, 12) generated by the first means on the display planes (3, 4) respectively wherein brightness of each of the first two-dimensional images (11, 12) is changed independently for each display plane (3, 4) so as to display the background plane at an arbitrary position in the three dimensional space (again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

third means for generating second two-dimensional images (i.e., 6, 7; the third means for generating the second two-dimensional images is inherent in the existence of the second two-dimensional images (6, 7)) that are obtained by projecting the display

Art Unit: 2629

object (6, 7) onto the plurality of display planes (3, 4) along a line of sight of the observer (8; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

fourth means for displaying the second two-dimensional images (i.e., 6, 7) generated by the third means on the display planes (3, 4) respectively in which brightness of each of the two-dimensional images (6, 7) is set to be the same among the display planes (3, 4; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]; it is implicit in the disclosure of Bell that the brightness of each of the two-dimensional images (6, 7) can be set to be the same among the display planes (3, 4)).

Bell does not explicitly disclose a program for causing a computer to function according to the described method. However, software applications are well known in the art for carrying out the steps described in a method. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made that the method as disclosed by Bell can be incorporated in a program for causing a computer to function.

Art Unit: 2629

20. As pertaining to **Claim 26**, Bell discloses (see Fig. 2 and Fig. 4) that the brightness of each of the second two-dimensional images (6, 7) displayed on each display plane (3, 4) is 0 (see Page 5, Para. [0092]-[0095]; it is implicit in the disclosure of Bell that the second two-dimensional images can have a brightness of 0).

21. As pertaining to **Claim 27**, Bell discloses (see Fig. 2 and Fig. 4) that each of the second two-dimensional images (6, 7) is a two-dimensional image in which the displayed brightness is controlled by pixel values having predetermined levels of gray, and each pixel value of each of the second two-dimensional images (6, 7) displayed on each display plane (3, 4) is 0 (again, see Page 5, Para. [0092]-[0095]; it is implicit in the disclosure of Bell that the second two-dimensional images can have a brightness of 0).

22. **Claims 4-6, 10-11, 16-18, and 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bell in view of Sullivan (US 6,377,229).

23. As pertaining to **Claim 4**, Bell discloses (see Fig. 1, Fig. 2, and Fig. 4) a three-dimensional display method for displaying two-dimensional images, by changing brightness, on a plurality of display planes (i.e., 3, 4) placed at different depth positions as seen from an observer (8) to display a three-dimensional stereoscopic image (see Page 1, Para. [0002]-[0006] and Para. [0010]-[0011]; Page 2, Para. [0016] and Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]), wherein,

Art Unit: 2629

on a background plane (i.e., 11, 12) displayed at an arbitrary position in a three-dimensional space (see Fig. 2), a display object (i.e., 6, 7) having brightness brighter than that of the background plane (11, 12) is displayed (see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]), the method comprising:

generating first two-dimensional images (i.e., 11, 12) that are obtained by projecting the background plane (11, 12) onto the plurality of display planes (3, 4) along a line of sight of the observer (8), and displaying the first two-dimensional images (11, 12) on the display planes (3, 4) respectively wherein brightness of each of the first two-dimensional images (11, 12) is changed independently for each display plane (3, 4; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]); and

generating second two-dimensional images (i.e., 6, 7) that are obtained by projecting the display object (6, 7) onto the plurality of display planes (3, 4) along the line of sight of the observer (8), and displaying the second two-dimensional images (6, 7) on the display planes (3, 4) respectively in which brightness of each of the two-dimensional images (6, 7) is set to be the same among the display planes (3, 4; again see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]; it is implicit in the disclosure of Bell that the brightness of each of



Art Unit: 2629

the two-dimensional images (6, 7) can be set to be the same among the display planes (3, 4)).

Bell does not explicitly disclose that the method comprises controlling the transparency of the two-dimensional images. Further, Bell does not explicitly disclose that the transparency of each of the first two-dimensional images is changed independently for each display plane; nor does Bell disclose that the transparency of each of the two-dimensional images is set to be the same among the display planes. However, Bell does disclose the use of transparent imaging screens (see Abstract; Page 3, Para. [0048]-[0053; and Page 4, Para. [0073]-[0075]).

Sullivan discloses (see Fig. 1 and Fig. 4 through Fig. 7) a three-dimensional display method for displaying two-dimensional images, by changing transparency, on a plurality of display planes (i.e., 36, 38, 40, 42) placed at different depth positions as seen from an observer (12) to display a three-dimensional stereoscopic image (see Abstract; also see Col. 1, Ln. 25-41; Col. 1, Ln. 65-67 through Col. 2, Ln. 1-49; Col. 4, Ln. 31-67 through Col. 5, Ln. 1-67 through Col. 6, Ln. 1-32), wherein, the transparency of each of the two-dimensional images is changed independently for each display plane (36, 38, 40, 42; see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57). Further, Sullivan discloses (see Fig. 4 through Fig. 7) that the transparency of each two-dimensional image can be set to be the same among the display planes (36, 38, 40, 42). It is a goal of Sullivan to provide a high quality three-dimensional imaging method and apparatus with improved viewability and implementation. Further, the inventions of Sullivan and

Art Unit: 2629

Bell are in the same field of endeavor. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Bell and Sullivan.

24. As pertaining to **Claim 5**, Sullivan discloses (see Fig. 4 through Fig. 7) that the transparency of each of the second two-dimensional images (i.e., 6, 7; as disclosed by Bell) displayed on each display plane (i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is the maximum value (i.e., fully transparent; see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

25. As pertaining to **Claim 6**, Sullivan discloses (see Fig. 4 through Fig. 7) that each of the second two-dimensional images (6, 7 as disclosed by Bell) is a two-dimensional image in which the transparency of the display plane (i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is controlled by pixel values having predetermined levels of gray, and each pixel value of each of the second two-dimensional images (6, 7 as disclosed by Bell) displayed on each display plane ((i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is a value representing the maximum transparency (i.e., fully transparent; again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

Art Unit: 2629

26. As pertaining to **Claim 10**, Sullivan discloses (see Fig. 4 through Fig. 7 of Sullivan) that the display object (i.e., 6, 7 as also disclosed by Bell) is character information (i.e., text; see Col. 6, Ln. 66-67 through Col. 7, Ln. 1-8);

the background plane is a background of a screen on which the character information is input or edited (i.e., displayed; see (36, 38, 40, 42); also see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57); and

a background plane of a selected character information part is displayed at a depth position different from a depth position at which a background plane of other character information is displayed (see Fig. 4 through Fig. 7; and again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

27. As pertaining to **Claim 11**, Sullivan discloses (see Fig. 4 through Fig. 7 of Sullivan) that the display object (i.e., 6, 7 as also disclosed by Bell) is character information (i.e., text; see Col. 6, Ln. 66-67 through Col. 7, Ln. 1-8);

the background plane is a background of a screen on which the character information is input or edited (i.e., displayed; see (36, 38, 40, 42); also see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57); and

a background plane of a character information part that is searched by a search function (i.e., visually scanned) is displayed at a depth position different from a depth position at which a background plane of other character information is displayed (see Fig. 4 through Fig. 7; and again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

28. As pertaining to **Claim 16**, Bell discloses (see Fig. 1, Fig. 2, and Fig. 4) a three-dimensional display apparatus for displaying two-dimensional images on a plurality of transmissive display apparatuses (i.e., 3, 4; see Abstract; see Page 2, Para. [0020]; Page 3, Para. [0048]-[0050]; and Page 4, Para. [0058]-[0062] and Para. [0073]-[0076]) placed at different depth positions as seen from an observer (8) to display a three-dimensional stereoscopic image (see Page 1, Para. [0002]-[0006] and Para. [0010]-[0011]; Page 2, Para. [0016] and Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]), wherein, a display object (i.e., 6, 7) is an object displayed on a background plane (i.e., 11, 12) displayed at an arbitrary position in a three-dimensional space (see Fig. 2), and has brightness brighter than that of the background plane (11, 12; see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]), the apparatus comprising:

first means for generating first two-dimensional images (i.e., 11, 12; the first means for generating the first two-dimensional images is inherent in the existence of the first two-dimensional images (11, 12)) that are obtained by projecting the background plane (11, 12) onto a plurality of display planes (3, 4) of the transmissive display apparatuses (3, 4) along a line of sight of the observer (8; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

second means for displaying the first two-dimensional images (i.e., 11, 12) generated by the first means on the transmissive display apparatuses (3, 4) respectively wherein brightness of each of the first two-dimensional images (11, 12) is changed independently for each transmissive display apparatus (3, 4) to display the background plane at an arbitrary position in the three dimensional space (again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

third means for generating second two-dimensional images (i.e., 6, 7; the third means for generating the second two-dimensional images is inherent in the existence of the second two-dimensional images (6, 7)) that are obtained by projecting the display object (6, 7) onto the plurality of display planes (3, 4) of the transmissive display apparatuses (3, 4) along the line of sight of the observer (8; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

fourth means for displaying the second two-dimensional images (i.e., 6, 7) generated by the third means on the transmissive display apparatuses (3, 4) respectively in which brightness of each of the two-dimensional images (6, 7) is set to be the same among the transmissive display apparatuses (3, 4; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see

Art Unit: 2629

Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]; it is implicit in the disclosure of Bell that the brightness of each of the two-dimensional images (6, 7) can be set to be the same among the display planes (3, 4)).

Bell does not explicitly disclose that the transparency of each of the first two-dimensional images is changed independently for each transmissive display apparatus; nor does Bell disclose that the transparency of each of the two-dimensional images is set to be the same among the transmissive display apparatuses. However, Bell does disclose the use of transparent imaging screens (see Abstract; Page 3, Para. [0048]-[0053; and Page 4, Para. [0073]-[0075]).

Sullivan discloses (see Fig. 1 and Fig. 4 through Fig. 7) a three-dimensional display method and associated apparatus for displaying two-dimensional images on a plurality of transmissive display apparatuses (i.e., 36, 38, 40, 42) placed at different depth positions as seen from an observer (12) to display a three-dimensional stereoscopic image (see Abstract; also see Col. 1, Ln. 25-41; Col. 1, Ln. 65-67 through Col. 2, Ln. 1-49; Col. 4, Ln. 31-67 through Col. 5, Ln. 1-67 through Col. 6, Ln. 1-32), wherein, the transparency of each of the two-dimensional images is changed independently for each transmissive display apparatus (36, 38, 40, 42; see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57). Further, Sullivan discloses (see Fig. 4 through Fig. 7) that the transparency of each two-dimensional image can be set to be the same among the transmissive display apparatuses (36, 38, 40, 42). It is a goal of Sullivan to provide a high quality three-dimensional imaging method and apparatus with improved

viewability and implementation. Further, the inventions of Sullivan and Bell are in the same field of endeavor. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Bell and Sullivan.

29. As pertaining to **Claim 17**, Sullivan discloses (see Fig. 4 through Fig. 7) that the transparency of each of the second two-dimensional images (i.e., 6, 7; as disclosed by Bell) displayed on each transmissive display apparatus (i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is the maximum value (i.e., fully transparent; see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

30. As pertaining to **Claim 18**, Sullivan discloses (see Fig. 4 through Fig. 7) that each of the second two-dimensional images (6, 7 as disclosed by Bell) is a two-dimensional image in which the transparency on the transmissive display apparatus (i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is controlled by pixel values having predetermined levels of gray, and each pixel value of each of the second two-dimensional images (6, 7 as disclosed by Bell) displayed on each transmissive display apparatus ((i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is a value representing the maximum transparency (again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

31. As pertaining to **Claim 22**, Sullivan discloses (see Fig. 4 through Fig. 7 of Sullivan) that the display object (i.e., 6, 7 as also disclosed by Bell) is character information (i.e., text; see Col. 6, Ln. 66-67 through Col. 7, Ln. 1-8);

the background plane is a background of a screen on which the character information is input or edited (i.e., displayed; see (36, 38, 40, 42); also see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57); and

the second means (as disclosed by Bell) displays a background plane of a selected character information part is displayed at a depth position different from a depth position at which a background plane of other character information is displayed (see Fig. 4 through Fig. 7; and again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

32. As pertaining to **Claim 23**, Sullivan discloses (see Fig. 4 through Fig. 7 of Sullivan) that the display object (i.e., 6, 7 as also disclosed by Bell) is character information (i.e., text; see Col. 6, Ln. 66-67 through Col. 7, Ln. 1-8);

the background plane is a background of a screen on which the character information is input or edited (i.e., displayed; see (36, 38, 40, 42); also see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57); and

the second means (as disclosed by Bell) displays a background plane of a character information part that is searched by a search function (i.e., visually scanned) is displayed at a depth position different from a depth position at which a background plane of other character information is displayed (see Fig. 4 through Fig. 7; and again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).



33. As pertaining to **Claim 28**, Bell discloses (see Fig. 1, Fig. 2, and Fig. 4) a three-dimensional display apparatus for displaying two-dimensional images on a plurality of transmissive display apparatuses (i.e., 3, 4; see Abstract; see Page 2, Para. [0020]; Page 3, Para. [0048]-[0050]; and Page 4, Para. [0058]-[0062] and Para. [0073]-[0076]) placed at different depth positions as seen from an observer (8) to display a three-dimensional stereoscopic image (see Page 1, Para. [0002]-[0006] and Para. [0010]-[0011]; Page 2, Para. [0016] and Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]), wherein, a display object (i.e., 6, 7) is an object displayed on a background plane (i.e., 11, 12) displayed at an arbitrary position in a three-dimensional space (see Fig. 2), and has brightness brighter than that of the background plane (11, 12; see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]), the apparatus comprising:

first means for generating first two-dimensional images (i.e., 11, 12; the first means for generating the first two-dimensional images is inherent in the existence of the first two-dimensional images (11, 12)) that are obtained by projecting the background plane (11, 12) onto a plurality of display planes (3, 4) of the transmissive display apparatuses (3, 4) along a line of sight of the observer (8; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

Art Unit: 2629

second means for displaying the first two-dimensional images (i.e., 11, 12) generated by the first means on the transmissive display apparatuses (3, 4) respectively wherein brightness of each of the first two-dimensional images (11, 12) is changed independently for each transmissive display apparatus (3, 4) to display the background plane at an arbitrary position in the three dimensional space (again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

third means for generating second two-dimensional images (i.e., 6, 7; the third means for generating the second two-dimensional images is inherent in the existence of the second two-dimensional images (6, 7)) that are obtained by projecting the display object (6, 7) onto the plurality of display planes (3, 4) of the transmissive display apparatuses (3, 4) along the line of sight of the observer (8; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]);

fourth means for displaying the second two-dimensional images (i.e., 6, 7) generated by the third means on the transmissive display apparatuses (3, 4) respectively in which brightness of each of the two-dimensional images (6, 7) is set to be the same among the transmissive display apparatuses (3, 4; again, see Page 2, Para. [0022]-[0026]; Page 3, Para. [0030]-[0037], Para. [0040]-[0050], and Para. [0053]; Page 4, Para. [0062] and Para. [0073]-[0075]; and see Page 5, Para. [0081]; and see

Page 5, Para. [0089] and Page 6, Para. [0098]-[0107]; it is implicit in the disclosure of Bell that the brightness of each of the two-dimensional images (6, 7) can be set to be the same among the display planes (3, 4)).

Bell does not explicitly disclose that the transparency of each of the first two-dimensional images is changed independently for each transmissive display apparatus; nor does Bell disclose that the transparency of each of the two-dimensional images is set to be the same among the transmissive display apparatuses. However, Bell does disclose the use of transparent imaging screens (see Abstract; Page 3, Para. [0048]-[0053; and Page 4, Para. [0073]-[0075]).

Sullivan discloses (see Fig. 1 and Fig. 4 through Fig. 7) a three-dimensional display method and associated apparatus for displaying two-dimensional images on a plurality of transmissive display apparatuses (i.e., 36, 38, 40, 42) placed at different depth positions as seen from an observer (12) to display a three-dimensional stereoscopic image (see Abstract; also see Col. 1, Ln. 25-41; Col. 1, Ln. 65-67 through Col. 2, Ln. 1-49; Col. 4, Ln. 31-67 through Col. 5, Ln. 1-67 through Col. 6, Ln. 1-32), wherein, the transparency of each of the two-dimensional images is changed independently for each transmissive display apparatus (36, 38, 40, 42; see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57). Further, Sullivan discloses (see Fig. 4 through Fig. 7) that the transparency of each two-dimensional image can be set to be the same among the transmissive display apparatuses (36, 38, 40, 42). It is a goal of Sullivan to provide a high quality three-dimensional imaging method and apparatus with improved

Art Unit: 2629

viewability and implementation. Further, the inventions of Sullivan and Bell are in the same field of endeavor. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Bell and Sullivan.

Further, neither Bell nor Sullivan explicitly disclose a program for causing a computer to function according to the described method. However, software applications are well known in the art for carrying out the steps described in a method. Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made that the method as disclosed by Bell can be incorporated in a program for causing a computer to function.

34. As pertaining to **Claim 29**, Sullivan discloses (see Fig. 4 through Fig. 7) that the transparency of each of the second two-dimensional images (i.e., 6, 7; as disclosed by Bell) displayed on each transmissive display apparatus (i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is the maximum value (i.e., fully transparent; see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

35. As pertaining to **Claim 30**, Sullivan discloses (see Fig. 4 through Fig. 7) that each of the second two-dimensional images (6, 7 as disclosed by Bell) is a two-dimensional image in which the transparency on the transmissive display apparatus (i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is controlled

Art Unit: 2629

by pixel values having predetermined levels of gray, and each pixel value of each of the second two-dimensional images (6, 7 as disclosed by Bell) displayed on each transmissive display apparatus ((i.e., 3, 4 as disclosed by Bell corresponding to 36, 38, 40, 42 as disclosed by Sullivan) is a value representing the maximum transparency (again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

36. As pertaining to **Claim 34**, Sullivan discloses (see Fig. 4 through Fig. 7 of Sullivan) that the display object (i.e., 6, 7 as also disclosed by Bell) is character information (i.e., text; see Col. 6, Ln. 66-67 through Col. 7, Ln. 1-8);

the background plane is a background of a screen on which the character information is input or edited (i.e., displayed; see (36, 38, 40, 42); also see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57); and

the second means (as disclosed by Bell) displays a background plane of a selected character information part is displayed at a depth position different from a depth position at which a background plane of other character information is displayed (see Fig. 4 through Fig. 7; and again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

37. As pertaining to **Claim 35**, Sullivan discloses (see Fig. 4 through Fig. 7 of Sullivan) that the display object (i.e., 6, 7 as also disclosed by Bell) is character information (i.e., text; see Col. 6, Ln. 66-67 through Col. 7, Ln. 1-8);

the background plane is a background of a screen on which the character information is input or edited (i.e., displayed; see (36, 38, 40, 42); also see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57); and

the second means (as disclosed by Bell) displays a background plane of a character information part that is searched by a search function (i.e., visually scanned) is displayed at a depth position different from a depth position at which a background plane of other character information is displayed (see Fig. 4 through Fig. 7; and again, see Col. 10, Ln. 31-67 through Col. 11, Ln. 1-57).

### ***Allowable Subject Matter***

38. **Claims 7-8, 12, 19-20, 24, and 41-44** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

39. The following is a statement of reasons for the indication of allowable subject matter: none of the references relied upon by the examiner alone or in combination teach or fairly suggest the limitations of **Claims 7-8, 12, 19-20, 24, and 41-44**.

40. As pertaining to **Claim 7**, none of the relied upon references teach or fairly suggest a background plane of lines after a line including a cursor indicating an inputting

or editing position of the character information is displayed at a depth position different from a depth position at which a background plane of the line including the cursor and lines before the line including the cursor is displayed.

41. As pertaining to **Claim 8**, none of the relied upon references teach or fairly suggest a background plane of a line including a cursor indicating an inputting or editing position of the character information and lines after the line including the cursor is displayed at a depth position different from a depth position at which a background plane of lines before the line including the cursor is displayed.

42. As pertaining to **Claim 12**, none of the relied upon references teach or fairly suggest that the background plane is a background of a table or a menu in which character information are arranged and from which a piece of character information can be selected; and a background plane of a selected character information part is displayed at a depth position different from a depth position at which a background plane of other character information is displayed.

43. As pertaining to **Claim 19**, none of the relied upon references teach or fairly suggest that the second means displays a background plane of lines after a line including a cursor indicating an inputting or editing position of the character information at a depth position different from a depth position at which a background plane of the line including the cursor and lines before the line including the cursor is displayed.

44. As pertaining to **Claim 20**, none of the relied upon references teach or fairly suggest that the second means displays a background plane of a line including a cursor indicating an inputting or editing position of the character information and lines after the line including the cursor at a depth position different from a depth position at which a background plane of lines before the line including the cursor is displayed.

45. As pertaining to **Claim 24**, none of the relied upon references teach or fairly suggest that the background plane is a background of a table or a menu in which character information are arranged and from which a piece of character information can be selected; and the second means displays a background plane of a selected character information part at a depth position different from a depth position at which a background plane of other character information is displayed.

46. As pertaining to **Claim 41**, none of the relied upon references teach or fairly suggest brightness value determination means for comparing a brightness value of the display object with another brightness value; wherein, when it is determined that the brightness value of the display object is equal to or less than the predetermined threshold and the brightness value of the display object is less than the brightness value of the background by the brightness determination means, the brightness value calculation means calculates the brightness value of each two-dimensional image of the



background according to depth information of the display object and sets brightness values of the two-dimensional images of the display object to be the same.

47. As pertaining to **Claim 42**, none of the relied upon references teach or fairly suggest brightness value determination means for comparing a brightness value of the display object with another brightness value; wherein, when it is determined that the brightness value of the display object is equal to or less than the predetermined threshold by the brightness determination means, the brightness value calculation means changes the brightness value of the background to a value greater than the brightness value of the display object, and calculates the brightness value of each two-dimensional image of the background based on the changed brightness value according to depth information of the display object and sets brightness values of the two-dimensional images of the display object to be the same.

48. As pertaining to **Claim 43**, none of the relied upon references teach or fairly suggest brightness value determination means for comparing a brightness value of the display object with another brightness value; wherein, when it is determined that the brightness value of the display object is equal to or greater than the predetermined threshold and the brightness value of the display object is greater than the brightness value of the background by the brightness determination means, the transparency value calculation means calculates a transparency value of each two-dimensional image of the background according to depth information of the display object and sets

Art Unit: 2629

transparency values of the two-dimensional images of the display object to be the same.

49. As pertaining to **Claim 44**, none of the relied upon references teach or fairly suggest brightness value determination means for comparing a brightness value of the display object with another brightness value; wherein, when it is determined that the brightness value of the display object is equal to or greater than the predetermined threshold by the brightness determination means, the transparency value calculation means changes the brightness value of the background to a value less than the brightness value of the display object, and calculates the transparency value of each two-dimensional image of the background based on the changed brightness value according to depth information of the display object and sets transparency values of the two-dimensional images of the display object to be the same.

50. **Claims 37-40** are allowed.

51. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

52. The following is an examiner's statement of reasons for allowance: none of the references relied upon by the examiner alone or in combination teach or fairly suggest the limitations of **Claims 37-40**.

53. As pertaining to **Claim 37**, none of the relied upon references teach or fairly suggest a brightness value determination step of determining whether a brightness value of the display object is equal to or less than a predetermined threshold and the brightness value of the display object is less than a brightness value of the background; and a brightness value calculation step of, when it is determined that the brightness value of the display object is equal to or less than the predetermined threshold and the brightness value of the display object is less than the brightness value of the background, calculating the brightness value of each two-dimensional image of the background according to depth information of the display object and setting brightness values of the two-dimensional images of the display object to be the same.

54. As pertaining to **Claim 38**, none of the relied upon references teach or fairly suggest a brightness value determination step of determining whether a brightness value of the display object is equal to or less than a predetermined threshold; and a brightness value calculation step of, when the brightness value of the display object is equal to or less than the predetermined threshold, changing the brightness value of the background to a value greater than the brightness value of the display object, and calculating the brightness value of each two-dimensional image of the background

Art Unit: 2629

based on the changed brightness value according to depth information of the display object and setting brightness values of the two-dimensional images of the display object to be the same.

55. As pertaining to **Claim 39**, none of the relied upon references teach or fairly suggest a brightness value determination step of determining whether a brightness value of the display object is equal to or greater than a predetermined threshold and the brightness value of the display object is greater than a brightness value of the background; and a transparency value calculation step of, when it is determined that the brightness value of the display object is equal to or greater than the predetermined threshold and the brightness value of the display object is greater than the brightness value of the background, calculating a transparency value of each two-dimensional image of the background according to depth information of the display object and setting transparency values of the two-dimensional images of the display object to be the same.

56. As pertaining to **Claim 40**, none of the relied upon references teach or fairly suggest a brightness value determination step of determining whether a brightness value of the display object is equal to or greater than a predetermined threshold; and a transparency value calculation step of, when the brightness value of the display object is equal to or greater than the predetermined threshold, changing the brightness value of the background to a value less than the brightness value of the display object, and

Art Unit: 2629

calculating the transparency value of each two-dimensional image of the background based on the changed brightness value according to depth information of the display object and setting transparency values of the two-dimensional images of the display object to be the same.

57. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

58. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tracy (US 2002 / 0105516) discloses a method and apparatus for displaying an image in three dimensions.

Suyama et al. (US 6,940,473) discloses a three-dimensional representation method and apparatus.

DeLuca et al. (US 6,559,813) discloses a virtual reality display.

Art Unit: 2629

Suyama et al. (US 6,525,699) discloses a three-dimensional representation method and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Mandeville whose telephone number is 571-270-3136. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason Mandeville  
Examiner  
30 January 2008

JMM

  
ALEXANDER EISEN  
SUPERVISORY PATENT EXAMINER